CERES Systems Engineering Committee

Members: Maria Mitchum, NASA, DMO
Sandy Nolan, SAIC
Jill Travers, DAAC
Sue Sorlie, DAAC

Charter: Serve as a forum for resolving issues which affect more than one working group. Report to CERES Data Management Team

March 23, 1999 1:00pm

Satellite Sampling Strategies

Each PGE uses an environment (env) file that contains all of the environment variables that are fixed at runtime. The environment files contain the Production Request parameters, such as SS, PS, any additional PGE unique runtime parameters, and ConfigurationCode extracted from the CM database.

Thus far for PFM, there has only been the need for one environment file - typically per subsystem and/or per PGE.

Several PGE leads have mentioned that the SS be revamped so that the different portions of the SS be entered separately and then the SS be structured from the parts. It is much easier in script language to concatenate than to parse a word. The point is that the PGEs will need to be able to know which satellite, which instrument, and which imager is being processed.

Example, Enter:
a. Satellite
b. Instrument
c. Imager

Some SS = a-b-c or SS = a-c or SS = a-b

Within each Satellite/Instrument/Imager parameter, an array is being considered containing all of the choices available for processing. The committee is studying using one environment file, and issuing a pointer to indicate which of the three (or more) instruments is being processed.

Example, Enter Pointer to:
a. Satellite (TRMM Terra Terra)
b. Instrument (PFM FM1 FM2)
c. Imager (VIRS MODIS MODIS)

The PGEs will internally decide which path to take according to the input parameter (1,2, and/or 3) above.

For example, enter 2:
SS = Terra-FM1-MODIS

Furthermore, the Production Strategies may or may not be the same between the TRMM and AM processing and they will be treated in a similar manner as discussed above.

As far as we know, all of the PGEs will be generic. Some PGEs will require different scripts, such as Instrument, where the input filenames will be different.

Dr. Bruce Barkstrom has approved the Sampling Strategy (the field is limited to 20 characters) for Multi-Instrument Processing to be constructed in the following manner:

SS = Inst1+Inst2.... such as: SS = PFM+FM1+FM2+.....

Note here that '**only**' the Instrument Names will appear in the SamplingStrategy.

The committee is still not clear what options are required for Multi-Instrument Processing. A meeting will be arranged with the Science Team to resolve processing requirements.

Meeting adjourned at 2pm ses.

May 18, 1999, 1:00pm

Lee-hwa Chang joined the committee to discuss the problem the DAAC automation system developers were having with automating Subsystem 2. Possible changes to the Subsystem 2 PGEs were discussed and it was decided that a meeting with which included DAAC automation system developers would be scheduled.

Maria reported that she had talked with Alice about having environment files for each subsystem. Three new Runtime Parameters will be added to each PCF file. They will be Satellite or Platform, Instrument and Imager. Three environment variables will be set outside the ASCII file generator. They will be $SAT, $INST and $IMAG. The subsystem will have to include the following commands in their environment file:

setenv Satellite $SAT (or) setenv Platform $SAT
setenv Instrument $INST
setenv Imager $IMAG

Maria provided Jill with comments on the latest version of the CERES Operation Agreement.

Jill reported that the DAAC upgrade on darrin to Irix 6.5 has experienced delays due to compiler licensing issues. The upgrade on darrin should be complete by June 1, 1999.

Meeting Adjourned 2:30 pm skn

July 13, 1999, 1:00pm

The committee met with Fred Byrd from the LaTIS DAAC. Maria reviewed the slides that she prepared on 'CERES-ECS Metadata and QA' for the '1 on 1' meeting scheduled at the DAAC for

the next day. All agreed that the slide information was accurate.

Fred talked about the GRing option in the metadata files. Fred's epilogue parses the .met files to determine the maximum and minimum values for the lat/longs for the IMS database. The committee advised Fred to talk to Walt Miller about the search schema that Fred should use.

Nichele McKoy joined the committee to discuss the 'overlap' output files from PGE CER9.2P1. At present, these files are appended to another file. This logic will be changed to produce unique 'overlap' hourly files for the monthly processor. There was also a discussion on the disposition of the SFCB output files from PGE CER9.3P1. Fred explained that if all of the files, from an array of 'optional' output files, are missing, then the PGE was still considered a 'success'. This was not the intent of this PGE...at least one (1) of the SFCB zonal files must exist. Maria will need to revisit the definition of 'optional' and 'mandatory' files, when the files are one of many, as in an array.

Maria reported on the meeting that she had Friday, July 9, 1999 at LaTIS with Bob Ignacio, Don Rieger, Tom Regan and Fred Byrd. The Automated Product Generation System (APGS) staff requested the following parameters (describing the output SamplingStrategy): **Satellite, Instrument, Imager** appear separately and uniquely in the **PCFin and PCF for each PGE**: [see SE minutes from May 18, 1999.] Please consider the following as a **CERES Policy Statement**:

1. Three environment variables will be set outside the ASCII file generator. They will be:
   $SAT, $INST, and $IMAG

2. Each subsystem will have to include the following commands in their environment file:
   setenv Satellite $SAT (or) setenv Platform $SAT
   setenv Instrument $INST
   setenv Imager $IMAG

3. Three new Runtime Parameters will be **added to each PCFin and PCF** file. They will be:

Parameters	**Example in PCFin file**
Satellite [or Platform]	**Satellite = Terra**
Instrument	**Instrument = FM1**
Imager	**Imager = MODIS**

Sandy will be testing these features and we will send out an example. These new features must be in the PCFin and PCF files prior to Terra launch.

The APGS staff reminded me that Jim Kibler at the LaTIS review held July 13, 1998, stated that DMT will help the APGS staff in any way possible to assist the production automation development. The staff stressed that **consistency in PCFin and PCF nomenclature across all PGEs** 'is of utmost importance'. In addition to the request stated above, the following set of parameters that are used by the APGS system are the PGEName and DataDate. The DataDate parameters were defined by the metadata requirements: CERDataDateYear, CERDataDateMonth,CERDataDateDay, CERHRofDay, and CERHRofMonth. This is the example that was used in the CERES Software Bulletin 97-11.

```
141|PGEName|"4.5-6.1P1"                    /* from Production request */
142|SamplingStrategy|"TRMM-PFM-VIRS"       /* from Production Request */
143|ProductionStrategy|"PreFlight"         /* from Production Request */
144|CERDataDateYear|"1986"                 /* from Production Request */
145|CERDataDateMonth|"10"                  /* from Production Request */
146|CERDataDateDay|"01"                    /* from Production Request */
147|CERHrOfMonth|"05"                      /* from Production Request */
148|ConfigurationCode|"000000"            /* from LaTIS database */
149|SWsccr|"00013"                        /* from LaTIS database */.
150|DATAsccr|"00015"                       /* from LaTIS database */
```

It appears that I have found a discrepancy in the spelling of two parameters that have been used in the metadata, and hence in the .met files. In order to minimize the changes to the .met files, I have asked the APGS to ignore the case sensitivity of parameters, only the **spelling** of the parameters is important.

APGS can read either of the two sets of spellings in the PCFin and the PCF:

CERHRofDay and CERHRofMonth

or

CERHrOfDay and CERHrOfMonth

The **meta_util** requires the following in the PCF: CERHRofDay and CERHRofMonth

Fred will enhance the CM database at the DAAC in order to add the flexibility of the PGEName to the list of parameters of the ConfigurationCode Table.

Meeting Adjourned 2:20pm mvm

System Engineering Committee Update, August 3, 1999

The System Engineering Committee has not had a formal meeting in the last two weeks. I felt that I should bring the DMT up-to-date on activities being studied and organized in the SE office.

- Sandy is in the process of setting up a sample Environment file, PCFin and PCF to illustrate the request that was made by the APGS office, listed below, documented in the July 13, 1999 SE minutes.

The Automated Product Generation System (APGS) staff requested the following parameters (describing the output SamplingStrategy): Satellite, Instrument, Imager appear separately and uniquely in the PCFin and PCF for each PGE: [see SE minutes from May 18, 1999.] Please consider the following as a

CERES Policy Statement: 'Instrument' is a Mandatory parameter, 'Satellite' and 'Imager' are optional parameters to appear in the PCFin and PCF files for every CERES PGE, depending on PGE' requirements. If a PGE is Instrument-Independent, the Instrument Name will be set to 'CERES'.

1. Three environment variables will be set outside the ASCII file generator. They will be:
   $SAT, $INST, and $IMAG

2. Each subsystem will have to include the following commands in their environment file:
   setenv Satellite $SAT
   setenv Instrument $INST
   setenv Imager $IMAG

3. Three new Runtime Parameters will be **added to each PCFin and PCF** file. They will be:

Parameters	**Example in PCFin file**
Satellite	**Satellite = Terra**
Instrument	**Instrument = FM1**
Imager	**Imager = MODIS**

4. Add Satellite, Instrument and Imager to the PCF, again Instrument is Mandatory, Satellite and Imager are Optional.

```
141|PGEName|"4.5-6.1P1"                    /* from Production request */
142|SamplingStrategy|"TRMM-PFM-VIRS"       /* from Production Request */
143|ProductionStrategy|"PreFlight"          /* from Production Request */
144|CERDataDateYear|"1986"                  /* from Production Request */
145|CERDataDateMonth|"10"                   /* from Production Request */
146|CERDataDateDay|"01"                     /* from Production Request */
147|CERHrOfMonth|"05"                       /* from Production Request */
151|Satellite|"TRMM"                        /* from Production Request */
152|Instrument|"PFM"                        /* from Production Request */
153|Imager|"VIRS"                           /* from Production Request */
148|ConfigurationCode|"000000"             /* from LaTIS database */
149|SWsccr|"00013"                         /* from LaTIS database */.
150|DATAsccr|"00015"                        /* from LaTIS database */
```

- Jill has been busy with the MOSS2 End-to-End tests. PGEs 1.1P3, 1.2P1, 2.2P1, and 2.3P1 were used in the ETE test. An error occurred during multi-processing in SS2 processors, which had never occurred during TRMM processing, this will be fixed before Terra launch.
- A new form: 'CERES Archive Request Form', has been designed and will be used to request the file disposition of processed files. This form has been approved by the LaTIS DAAC and has been posted on the Web url: http://asd-www.larc.nasa.gov/ceres/dmt2daac/ Please submit requests to Maria for archive file removal or any other request of such nature.
- **Release 3** - at Terra launch, will be used for all Subsystem' Software, Delivery Memos, Test Plans, and Operator Manuals.
- **Release 4** - at PM1 launch, will be used for all Subsystem' Software, Delivery Memos, Test Plans, and Operator Manuals.
- On July 14, 1999, Jim, Jill, Maria and Sue participated in the all day 'one-on-one' meeting between CERES, LaTIS, ECS and ESDIS. The major topic of concern was to open the lines of communication on the viewing and ordering of CERES products from the ESDIS Web pages. A detail discussion was held on the implications to the LaTIS system and the CERES processors of the migration of CERES data products from LaTIS into the ECS system. The

LaTIS DAAC demonstrated that all CERES data products are ‘visible’ and ‘can be ordered’ through the ESDIS Web pages. Since the meeting, NASA Headquarters has reconsidered the edict that ‘all EOSDIS products will reside in the ECS archives’.

- A meeting was held on July 22, 1999, with Jim Kibler, Maria Mitchum, Lisa Coleman, Ed Kizer and John Robbins to discuss the file-handling, filenaming convention, and archival requirements of the ECMWF data. Guidelines were defined, requested, and approved by the LaTIS DAAC.
- On August 3, 1999, Maria met with Sharon Rodier at SAIC to review the progress of the CERES File Management System Database. Sharon demonstrated the Web-based access and retrieval display system that she has built. Several action items were discussed: freeze the Dataset Name, Product-ID, and filename (these items must be registered with Maria before changes can be made to these parameters); modify the PS and CC nomenclature in the DB to reflect the Subsystem number identification; add file-size, frequency, target PGE, destination or disposition (check with Fred’s nomenclature first); and add Temporary File Table.

Status by mvm